

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Currently amended) A crack-resistant printing paper or board comprising a pre-formed cellulose fiber network web; and a polymer material ~~impregnated into~~ applied to a surface of the web in thin discontinuous geometrical formations to define a plurality of discrete areas of said polymer material distributed over said web and forming spaced crack-arresting islands that impede crack propagation in said web; said polymer material penetrating into said web so that said surface of the paper or board ~~has a uniform surface~~ is uniform and suitable for subsequent coating and printing, wherein the polymer material is no more than 5% of the basis weight of the paper or board.

2. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the polymer material is a thermoplastic or thermoset material.

3. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the geometrical formations are rectangular stripes, equi-distant circles or diamond-shape formations.

4. (Cancelled)

5. (Cancelled)

6. (Original) The crack-resistant paper or board as claimed in Claim 1, wherein the polymer is selected from the group consisting of a latex blend, an acrylic polymer, a polyester resin and a liquid crystalline polymer.

7. (Cancelled)

8. (Currently amended) The crack-resistant paper or board as claimed in Claim 1, wherein a subsequent distinct polymer material is coated on [a] said surface of the paper or board.

9-17. (Cancelled)

18. (Currently Amended) A crack-resistant printing paper or board comprising a cellulose fiber network web; and a thin film of a polymer material deposited onto a surface of the web in discontinuous geometrical formations to form a plurality of discrete areas distributed over said web that are impregnated with said polymer material and form spaced crack-arresting islands that impede crack propagation in said web; said polymer material penetrating into said web so that said surface is uniform and suitable for subsequent coating and printing the paper or board has a uniform surface, wherein the polymer is selected from the group consisting of poly-butadiene, acrylonitrile-butadiene, ethylene vinyl acetate-butadiene, polyhydroxybutyrate-butanoate and a cellulose acetate butyrate, wherein the polymer material is no more than 5% of the basis weight of the paper or board.

19. (Cancelled)

20. (Previously presented) The crack-resistant paper or board as claimed in Claim 1 wherein the polymer is selected from the group consisting of diene-based rubber, acrylics, latex blends, polyesters and any combination thereof.

21. (Previously presented) The crack-resistant paper or board as claimed in Claim 1 wherein said fibers are pulp fibers.

22. (Previously presented) The crack-resistant paper or board as claimed in Claim 3 wherein the geometrical formations are rectangular stripes.

23. (Previously presented) The crack-resistant paper or board as claimed in Claim 3 wherein the geometrical formations are equi-distant circles.

24. (Previously presented) The crack-resistant paper or board as claimed in Claim 3 wherein the geometrical formations are diamond-shape formations.

25. (Currently Amended) A crack-resistant paper or board consisting essentially of a cellulose fiber network web; and a thin layer of a polymer material deposited onto a surface of the web and impregnated in the web in discontinuous geometrical formations to define a plurality of discrete areas distributed over said web that are impregnated with said polymer material and form spaced crack-arresting islands that impede crack propagation in said web, said polymer material penetrating into said web so that said surface is uniform, wherein the polymer material is selected from the group consisting of diene-based rubber, acrylics, latex blends, polyesters and any combination thereof and is no more than 5% of the basis weight of the paper or board.

26. (Cancelled)

27. (Previously presented) The crack-resistant paper or board as claimed in Claim 25, wherein the geometrical formations are rectangular stripes, equi-distant circles or diamond-shape formations.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Currently amended) The crack-resistant paper or board as claimed in Claim 25, wherein a subsequent distinct polymer material is coated on said [a] surface of the paper or board.

32. (Cancelled)

33. (Previously presented) The crack-resistant paper or board as claimed in Claim 25 wherein said fibers are pulp fibers.

34. (Previously presented) The crack-resistant paper or board as claimed in Claim 27 wherein the geometrical formations are rectangular stripes.

35. (Previously presented) The crack-resistant paper or board as claimed in Claim 27 wherein the geometrical formations are equi-distant circles.

36. (Previously presented) The crack-resistant paper or board as claimed in Claim 27 wherein the geometrical formations are diamond-shape formations.

37. (Currently amended) The crack-resistant paper or board as claimed in Claim 1, wherein the paper or board comprises calendered paper or board ~~is calendered~~.

38. (Currently amended) The crack-resistant paper or board as claimed in Claim 18, wherein the paper or board comprises calendered paper or board ~~is calendered~~.

39. (Currently amended) The crack-resistant paper or board as claimed in Claim 18, wherein a subsequent distinct polymer material is coated on said [a] surface of the paper or board.

40. (Previously presented) The crack-resistant paper or board as claimed in Claim 39, wherein the coated surface of the paper or board comprises print.

41. (Previously presented) The crack-resistant paper or board as claimed in Claim 31, wherein the coated surface of the paper or board comprises print.

42. (Previously presented) The crack-resistant paper or board as claimed in Claim 8, wherein the coated surface of the paper or board comprises print.

43. (Previously presented) The crack-resistant paper or board as claimed in Claim 1, wherein the cellulose fiber network web comprises pulp fibers.

44. (Previously presented) A crack-resistant paper or board comprising:
a pre-formed web of cellulose fibers;
a thin film of polymer material deposited onto said web in a discontinuous geometric pattern and impregnated into said web to form a plurality of spaced apart discrete areas distributed over said web, said polymer-impregnated areas forming crack-arresting islands that impede crack propagation and fracturing in said web without adversely affecting the modulus of elasticity and tensile strength of the paper or board; and
said polymer material penetrating into said web to form a substantially uniform flush surface for subsequent treatment such as coating and printing.